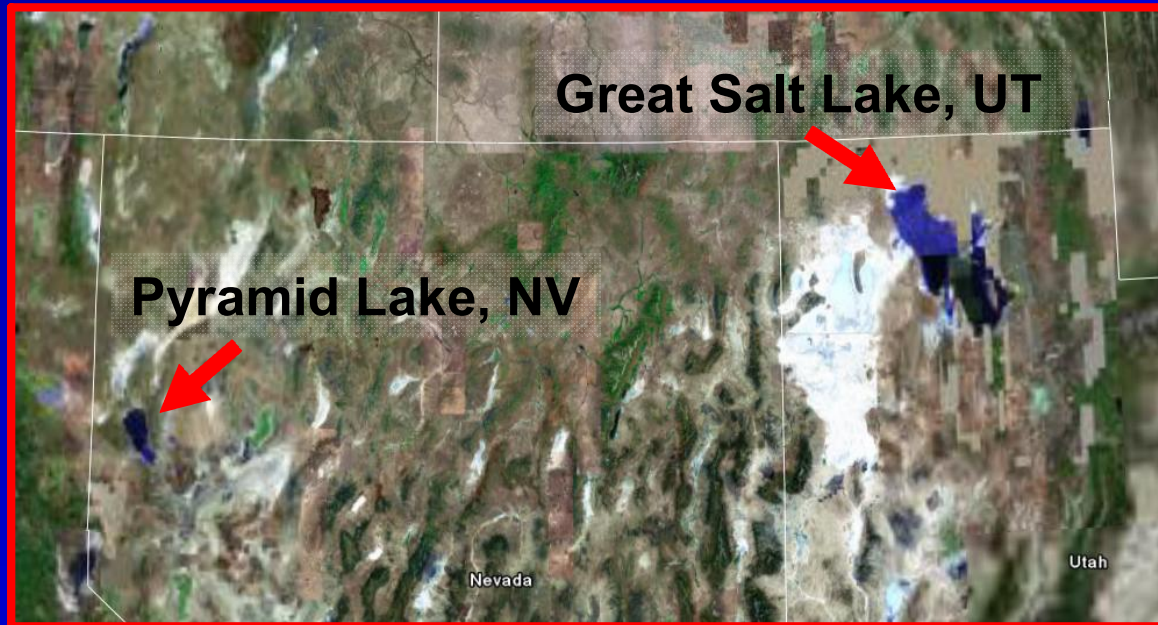


Long-term mercury deposition in Nevada and Utah with implications to aquatic biota and potential human health effects



David Naftz, USGS, Salt Lake City, UT

Michael Rosen and Mike Lico, USGS, Carson City, NV

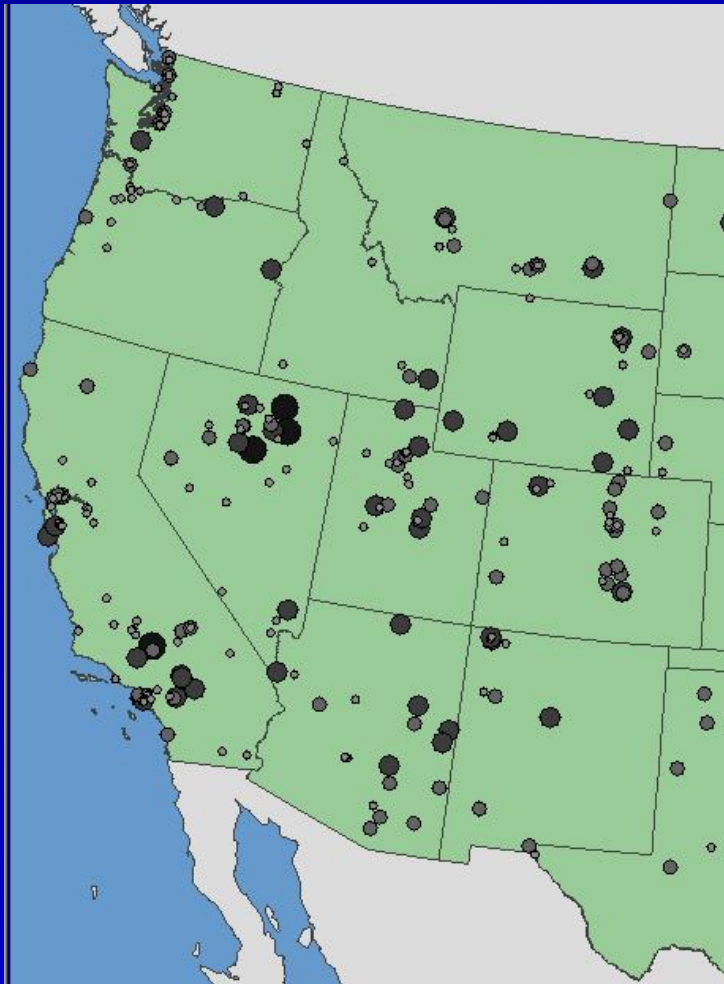
Nathan Darnall, USFWS, Salt Lake City, UT



— Great Salt Lake Research Team —



PROBLEM



- ◆ Long-term records of atmospheric mercury deposition are lacking in the western US and the projection of future trends is uncertain both for human health and ecological communities

Sources of Mercury

- ◆ ≤ 10 lbs/year
- ≤ 100 lbs/year
- ≤ 1000 lbs/year
- > 1000 lbs/year



STUDY OBJECTIVES

- 1.** Determine the rate of Hg deposition along an east to west transect where historic changes in atmospheric mercury sources have occurred
- 2.** Determine impacts of long-term mercury accumulation in lakes on the biota present and to infer possible effects on human health



STUDY APPROACH

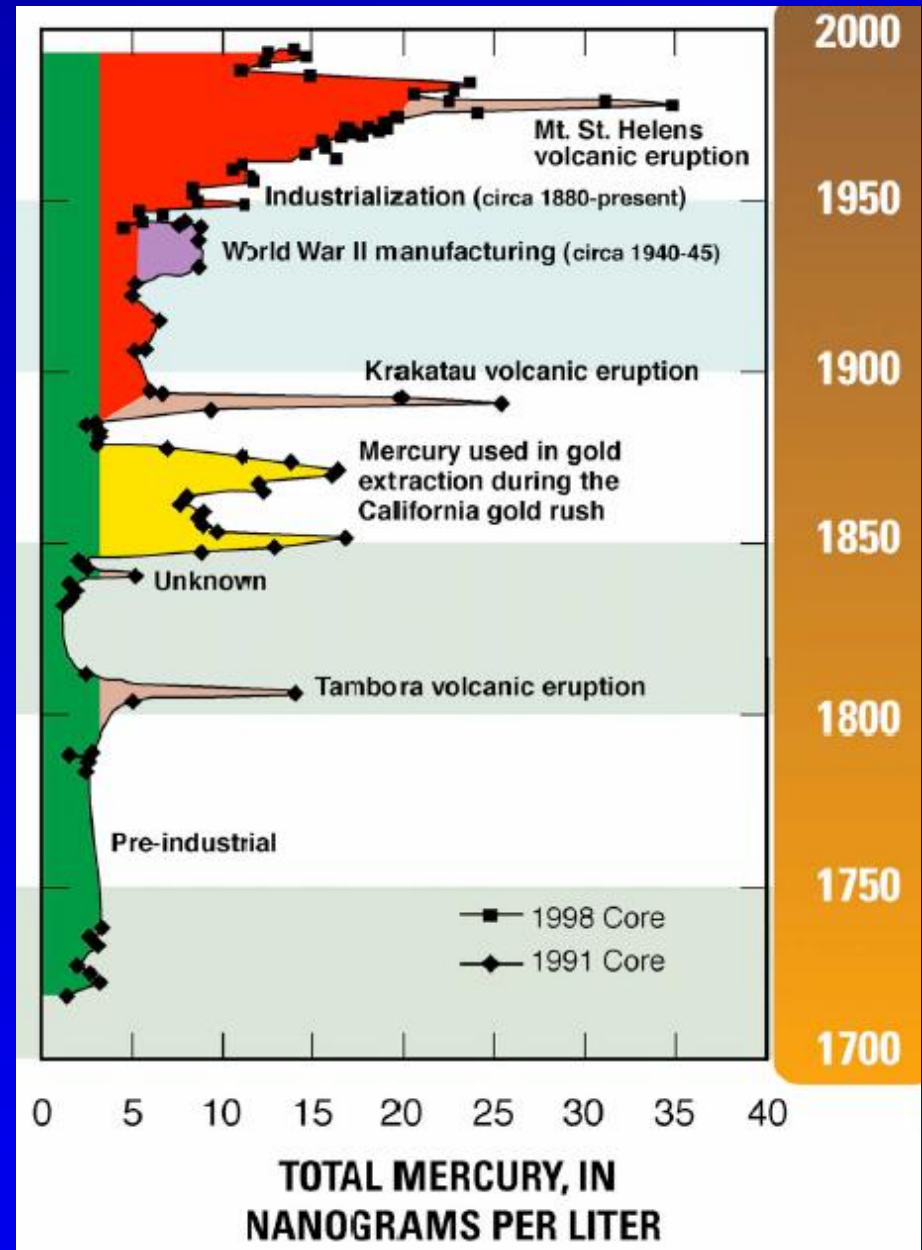
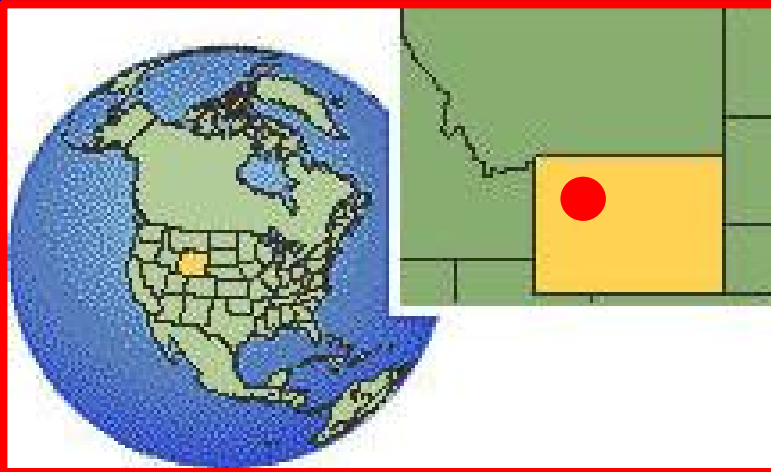
- ◆ Sediment cores collected along W-E transect in 7 lakes (western NV to GSL)
- ◆ Selection criteria: small catchment size, limited stream inflow, 150 yrs of record
- ◆ Age dating by Cs-137 and Pb-210
- ◆ Determine Hg and other TE (strong and weak acid digestions)
- ◆ Collection of invertebrates and fish (where available)
- ◆ Data analysis by non-parametric and multivariate statistical techniques



Great Salt Lake Research Team



RECORD OF MERCURY DEPOSITION

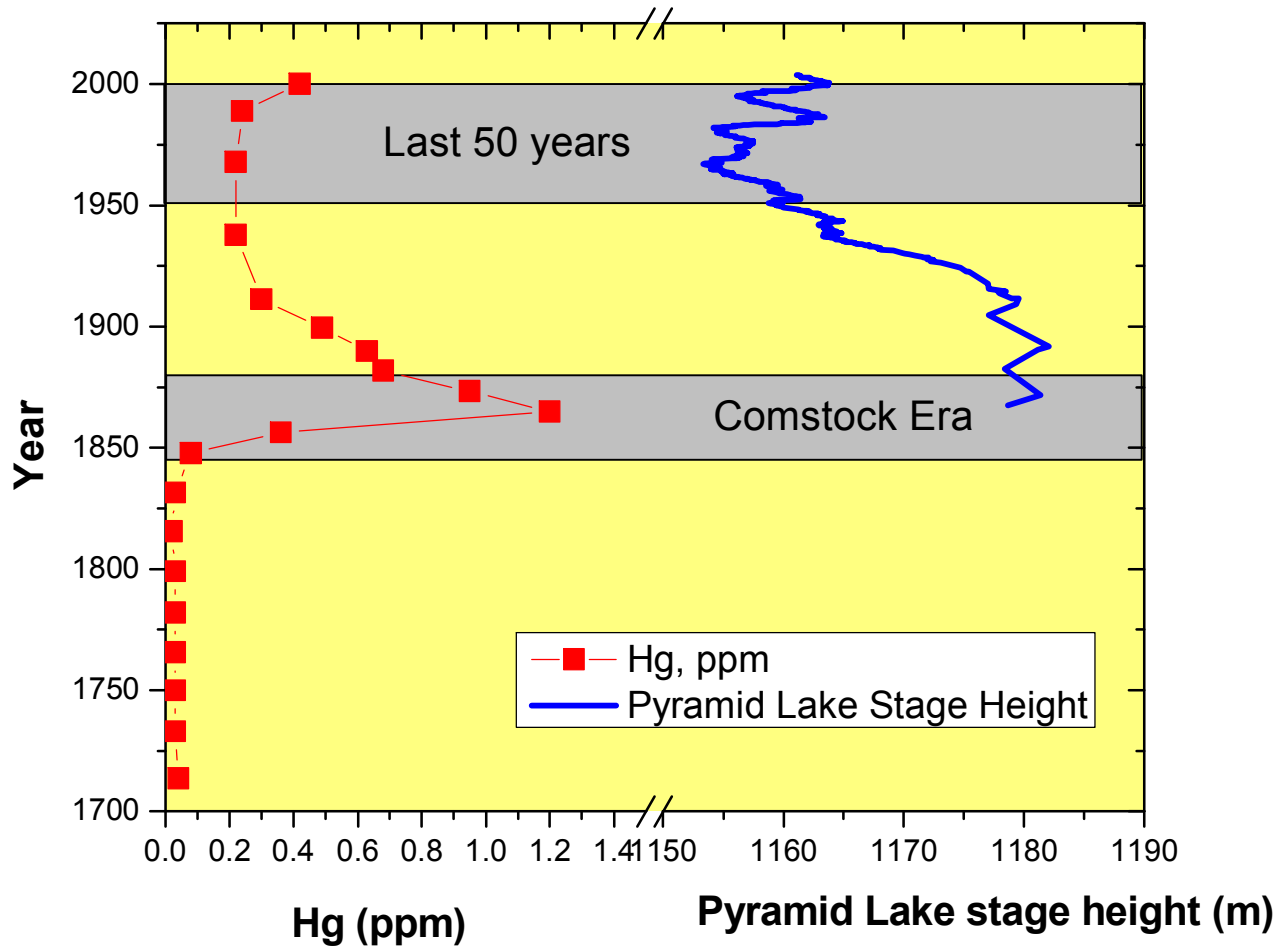


Great Salt Lake Research Team



Hg RECORD IN PYRAMID LK

M. Rosen, 2005



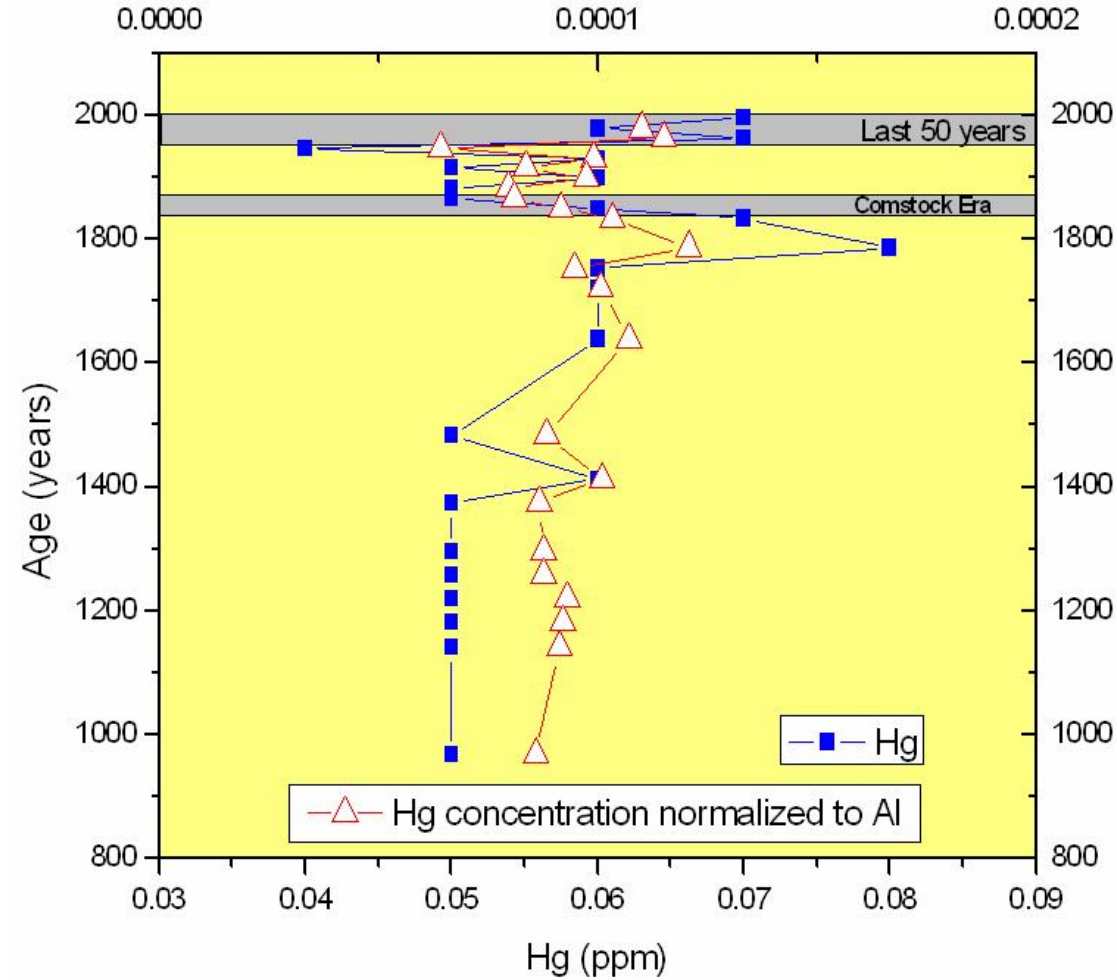
Great Salt Lake Research Team



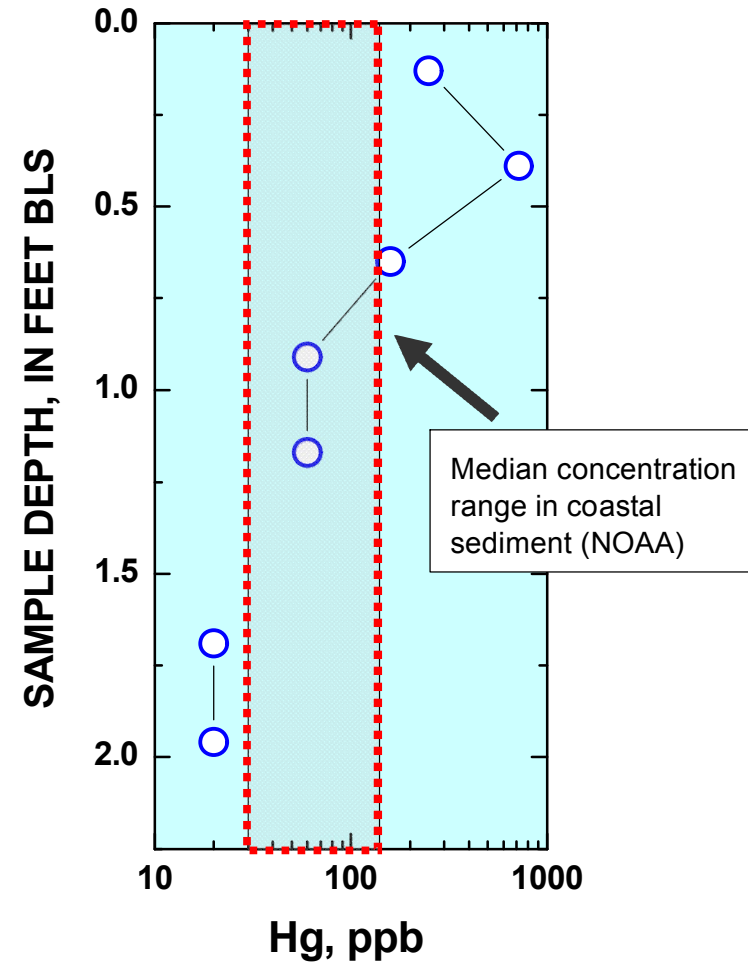
BAKER LK, NV

M. Rosen, 2005

Hg normalized to Al



GSL, UT



Great Salt Lake Research Team



PROPOSED BUDGET

Fund sources	FY06	FY07	FY08	Total Funds
USGS, Utah Science Center	\$28,000	\$24,200	\$23,400	\$75,600
USGS, Nevada Science Center	\$28,000	\$24,200	\$23,400	\$75,600
Utah Cooperator(s) (undefined)	\$42,000	\$36,300	\$35,100	\$113,400
Nevada Cooperator(s) (undefined)	\$42,000	\$36,300	\$35,100	\$113,400
Total	\$140,000.00	\$121,000.00	\$117,000.00	\$378,000.00



Great Salt Lake Research Team

